FERROXCUBE CORPORATION OF AMERICA

SAUGERTIES, NEW YORK

FERROXCUBE 30 MIL MEMORY CORE

Bulletin 842

PART NUMBER 30 FC 02

Application: Low temperature coefficient core for high speed coincident current memories with cycle times of 3.0 to 4.0 μsec—operated over wide ambient temperature ranges without compensation.

Mechanical Dimensions:

Outside diameter	= .0310 ± .002
Inside diameter	= .0195 ± .0015
Height	= .0084 ± .0005

Definitions: All terms used in this specification are defined in the A.S.T.M. proposed method of test for coincident current memory cores. Definitions are listed on the inside back cover of the Ferroxcube Memory Components Section Folder.

Average Operating Conditions:

	10°C	40°C	70°C
nI_f	740	670	600 mA
nI_p	370	335	300 mA
T_r	0.1	0.1	0.1 μsec
nT_d	0.8	0.8	0.8 μsec
$V_{ref.}$	3.5	3.5	3.5 mV
$N_{(dist.)}$	→ ∞	→ ∞	→ ∞

Average Output Signals: Under above operating conditions.

	10°C	40°C	70°C
uV_1	55	45	38 mV
rV_1	50	42	37 mV
dV_z	5	5	5 mV
T_p	0.26	0.26	0.27 μsec
T_s	0.46	0.48	0.50 μsec

Output Characteristics:

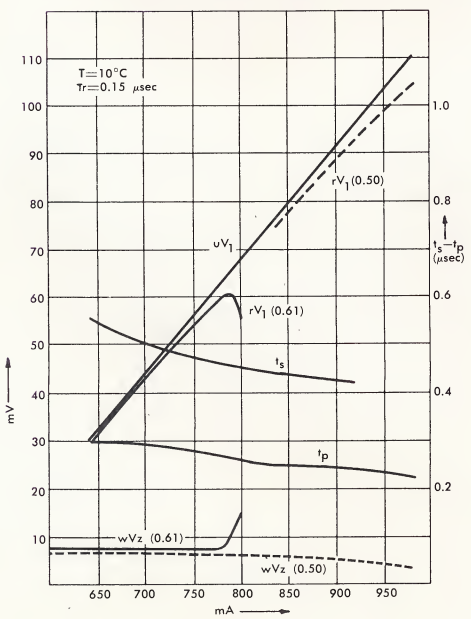

Figure 1

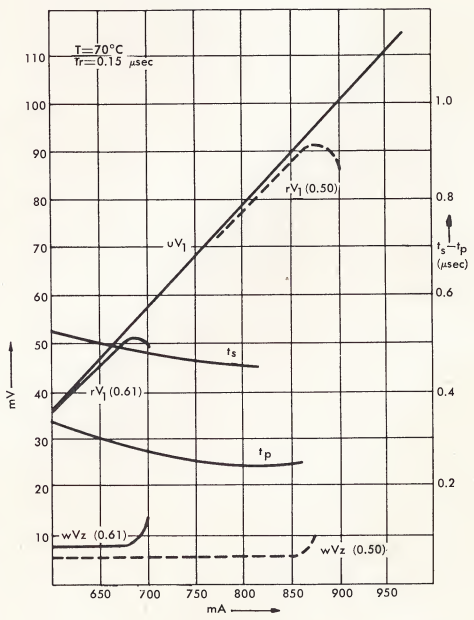

Figure 2

Figures 1 and 2 give performance under varying conditions of current drive and temperature (Adverse Conditions).

Adverse Test Conditions:

	10°C–70°C	
tI_f	665	mA
tI_p	405	mA
T_r	0.15	μsec
T_d	1.5	μsec
$V_{ref.}$	3.5	mV
$N_{(dist.)}$	32	

Average Output Signal Under Adverse Test Conditions:

	10°C	40°C	70°C	
uV_1	36	46	55	mV
rV_1	33	42	51	mV
dV_z	6	6	6	mV
T_p	0.30	0.30	0.30	μsec
T_s	0.55	0.55	0.54	μsec
U-R	3	4	4	mV

Manufacturing Test Limits:

	10°C	25°C	70°C
uV_1	—	—	—
rV_1	25	30	42
dV_z	8	8	8
T_p	0.26 μsec (min)	—	0.32 μsec (max.)
T_s	0.48 μsec (min.)	—	0.60 μsec (max.)

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FERROXCUBE 50 MIL MEMORY CORE

Bulletin 873

PART NUMBER 50 FC 03

Application: Low drive, medium speed coincident current memories with cycle times over 4 μsec.

Mechanical Dimensions:

Outside diameter	= .050	± .002
Inside diameter	= .031	± .002
Height	= .0150	± .0012

Definitions: All terms used in this specification are defined in the A.S.T.M. proposed method of test for coincident current memory cores. Definitions are listed on the inside back cover of the Ferroxcube Memory Components Section Folder.

Average Operating Conditions:

	25°C	40°C
nI_f	400	367 mA
nI_p	200	184 mA
T_r	0.2	0.2 μsec
nT_d	2.0	2.0 μsec
V ref.	4.5	4.5 mV
N (dist.)	→ ∞	→ ∞

Average Output Signals: Under above operating conditions.

	25°C	40°C
uV_1	63	63 mV
rV_1	61	60 mV
dV_z	8	8 mV
T_p	0.62	0.62 μsec
T_s	1.22	1.22 μsec

Output Characteristics:

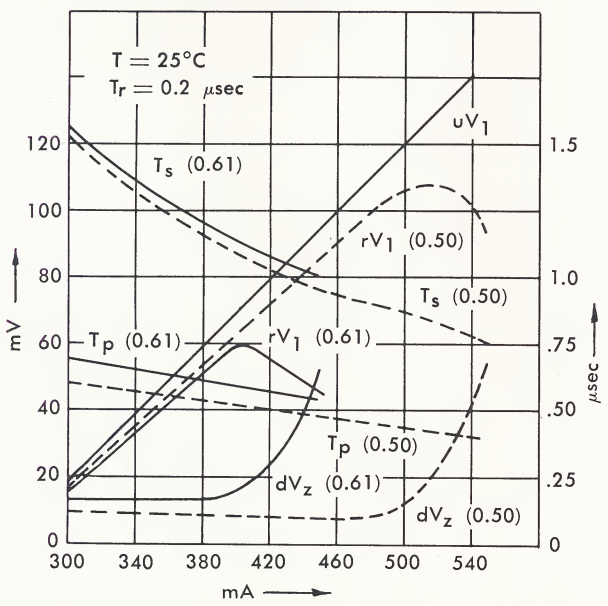

Figure 1

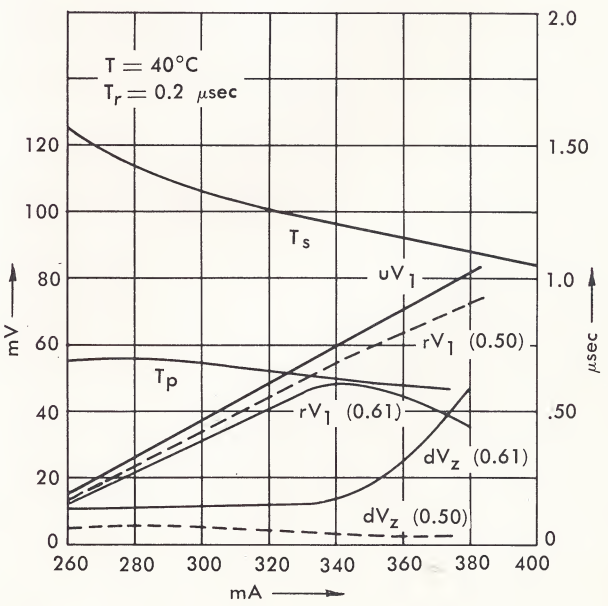

Figure 2

Figures 1 and 2 give information at 25°C and 40°C, respectively, at other drive currents (adverse conditions).

Adverse Test Conditions:

	25°C	40°C
tI_f	385	330 mA
tI_p	235	200 mA
T_r	0.2	0.2 μsec
T_d	4.0	4.0 μsec
$V_{ref.}$	4.5	4.5 mV
$N_{(dist.)}$	32	32

Average Output Signals Under Adverse Test Conditions:

	25°C	40°C
uV_1	57	48 mV
rV_1	53	44 mV
dV_z	11.5	11.5 mV
T_p	0.62	0.62 μsec
T_s	1.22	1.25 μsec
U-R	4.0	4.0 mV

Manufacturing Test Limits:

		40°C		
uV_1	—			
rV_1	42	mV	(min.)	
dV_z	14	mV	(max.)	
T_p	0.55	μsec	(min.)	—0.70 μsec (max.)
T_s	1.60	μsec	(max.)	
U-R	5	mV		

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FERROXCUBE 50 MIL MEMORY CORE

Bulletin 874

PART NUMBER 50 FC 04

Application: Low drive, medium speed coincident current memories for cycle times between 2 and 4 μsec. Because this non-lithium core is tested at 50° you can operate over a wider temperature range.

Mechanical Dimensions:

Outside diameter	= .050	±	.002
Inside diameter	= .031	±	.002
Height	= .0146	±	.004

Definitions: All terms used in this specification are defined in the A.S.T.M. proposed method of test for coincident current memory cores. Definitions are listed on the inside back cover of the Ferroxcube Memory Components Section Folder.

Average Operating Conditions:

	25°C	50°C
nI_f	500	450 mA
nI_p	250	225 mA
T_r	0.2	0.2 μsec
nT_d	1.5	1.5 μsec
$V_{ref.}$	4.7	4.7 mV
N (dist.)	→ ∞	→ ∞

Average Output Signals: Under above operating conditions.

	25°C	50°C
uV_1	69	67 mV
rV_1	66	65 mV
dV_z	7.0	7.0 mV
T_p	0.54	0.48 μsec
T_s	0.98	0.90 μsec

Output Characteristics:

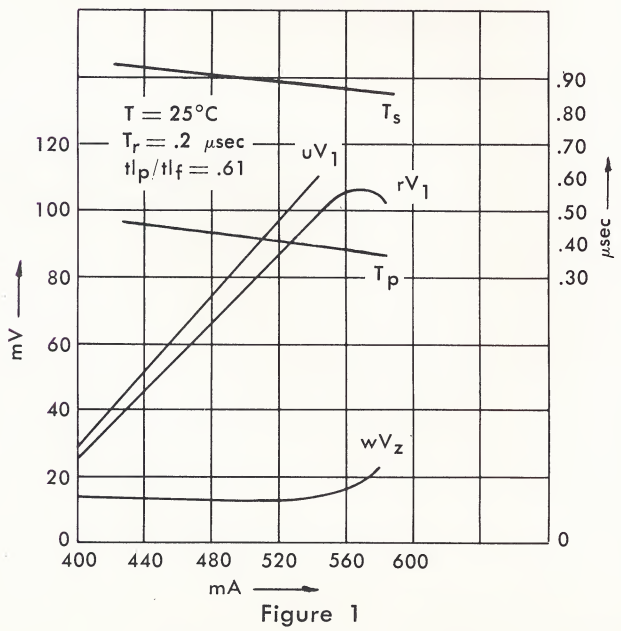

Figure 1

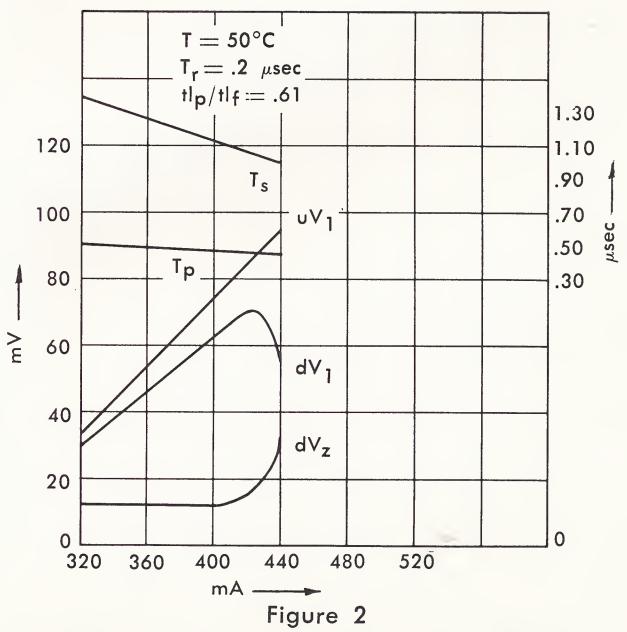

Figure 2

Figures 1 and 2 give information at 25°C and 50°C respectively, at other drive currents (Adverse Conditions).